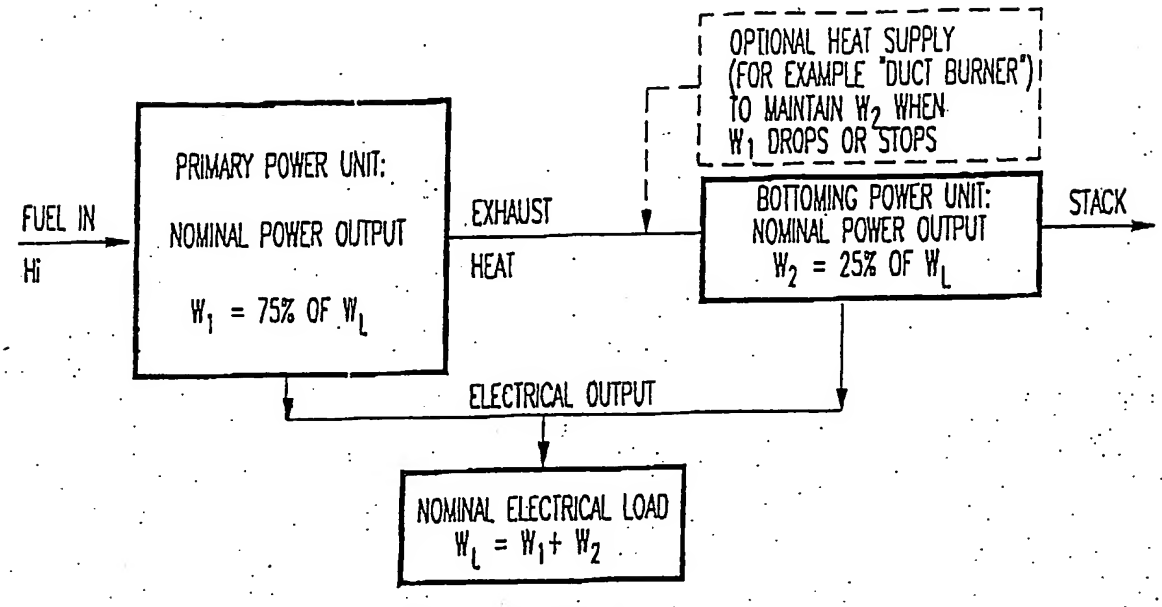
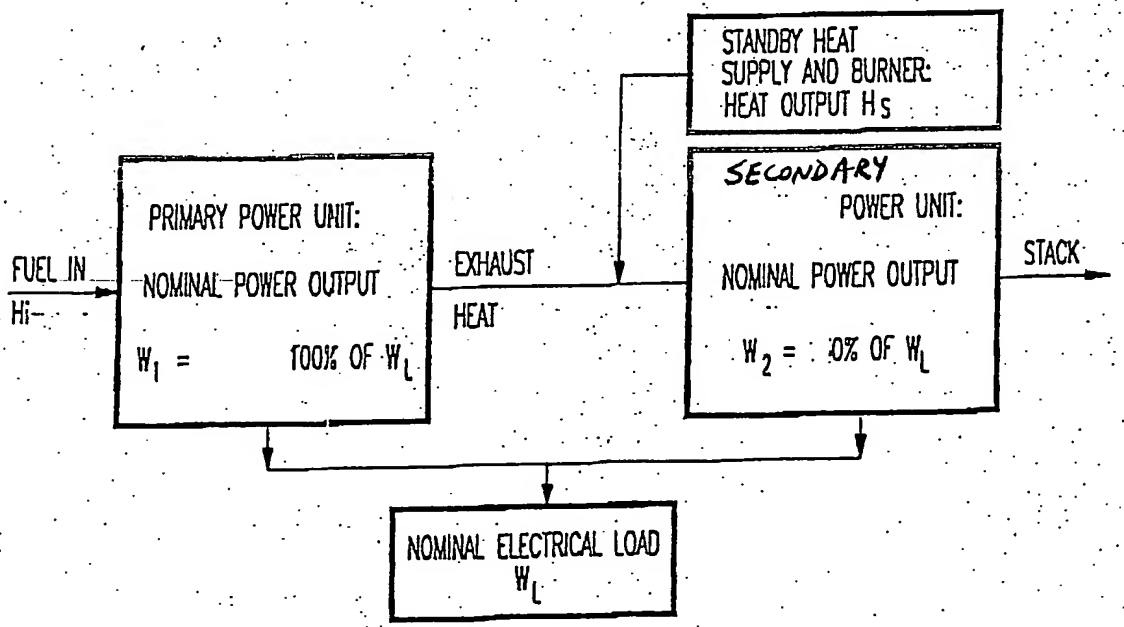


FIG. 1 PRIOR ART: CONVENTIONAL COMBINED CYCLE (TYPICAL)



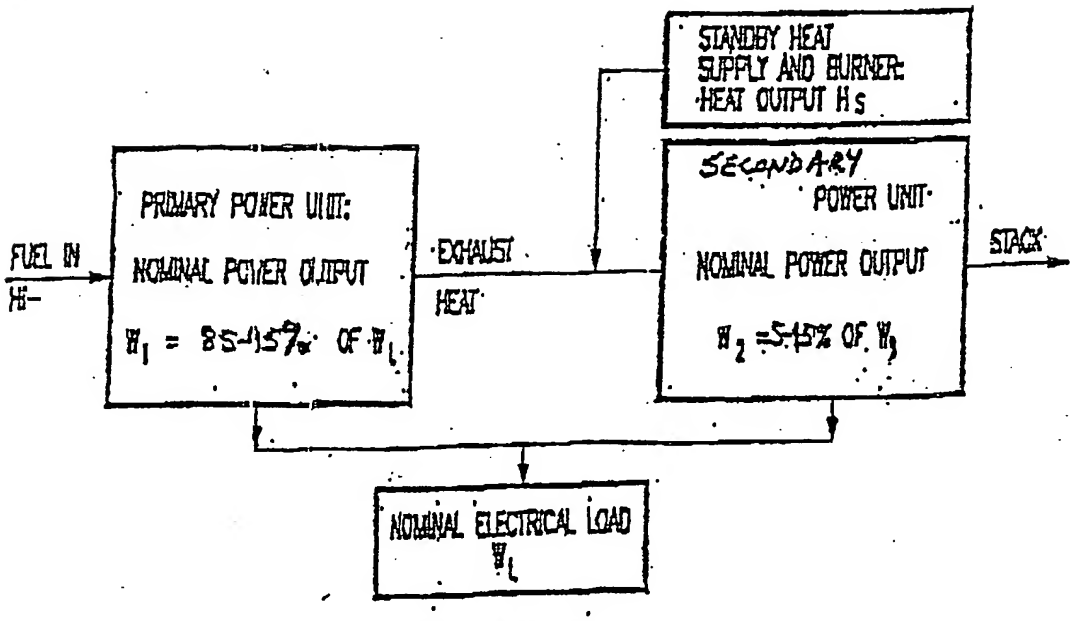
NORMAL OPERATION $W_L = W_1$

$Hs = 0$

STANDBY OPERATION W_L = 100% OF W_2

$Hs = 100\% > Hi$

FIG. 2 PROPOSED SYSTEM (EXAMPLE)



NORMAL OPERATION $W_L = W_1 + W_2$

$H_S = 0$

STANDBY OPERATION $W_1 = 5\text{-}15\%$ OF W_L

$W_2 = 5\text{-}15\%$ OF W_1

FIG. 2A PROPOSED SYSTEM (EXAMPLE)

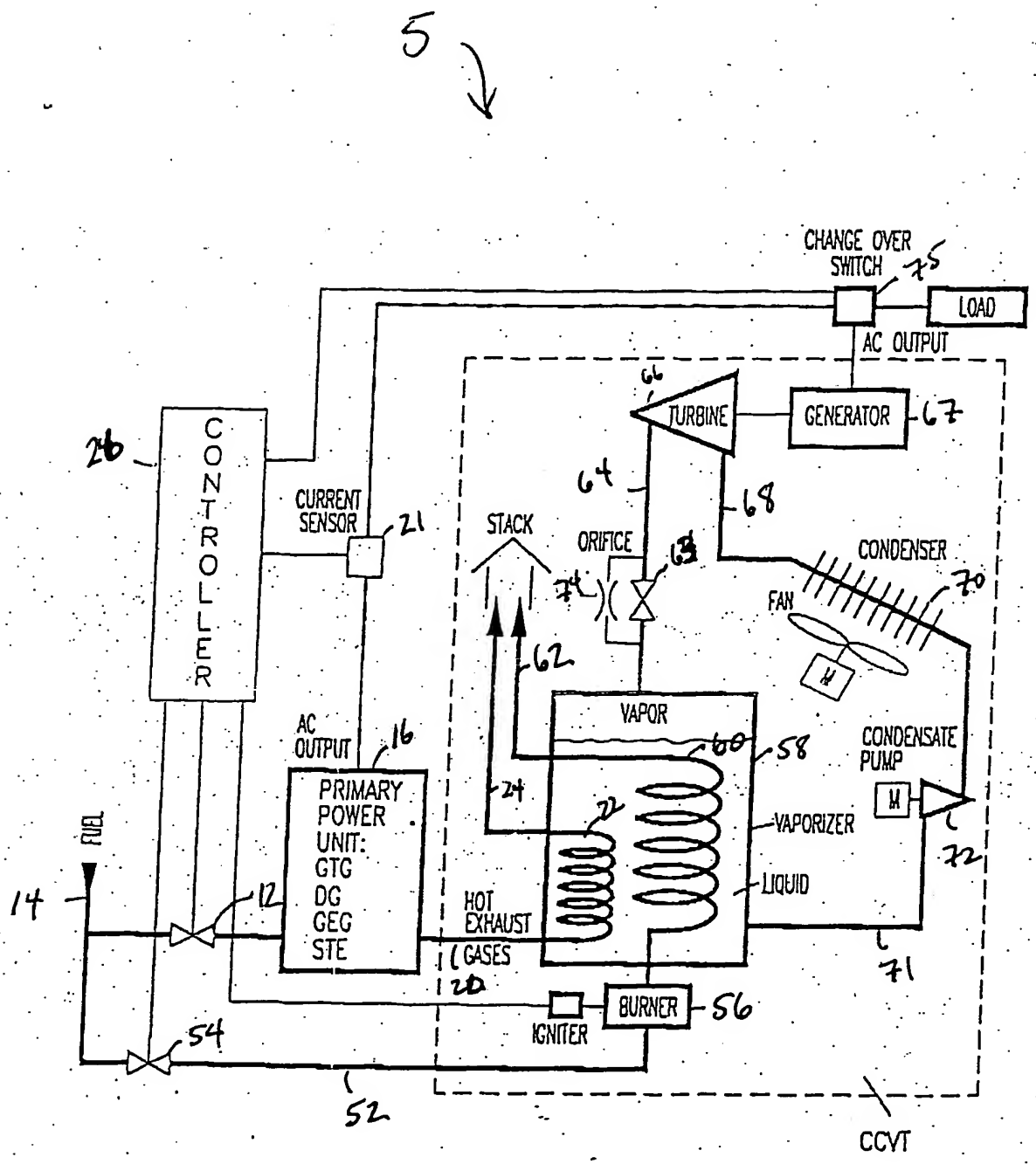

5
CHANGE OVER SWITCH
75
LOAD
AC OUTPUT
66
TURBINE
GENERATOR
67
26
CONTROLLER
64
68
CURRENT SENSOR
21
STACK
ORIFICE
63
CONDENSER
FAN
70
62
VAPOR
60
58
AC OUTPUT
16
CONDENSATE PUMP
24
22
VAPORIZER
72
FUEL
14
12
PRIMARY POWER UNIT: GTG DG GEG STE
HOT EXHAUST GASES
20
LIQUID
71
IGNITER
BURNER
56
54
52
CCVT

FIG. 3

5A

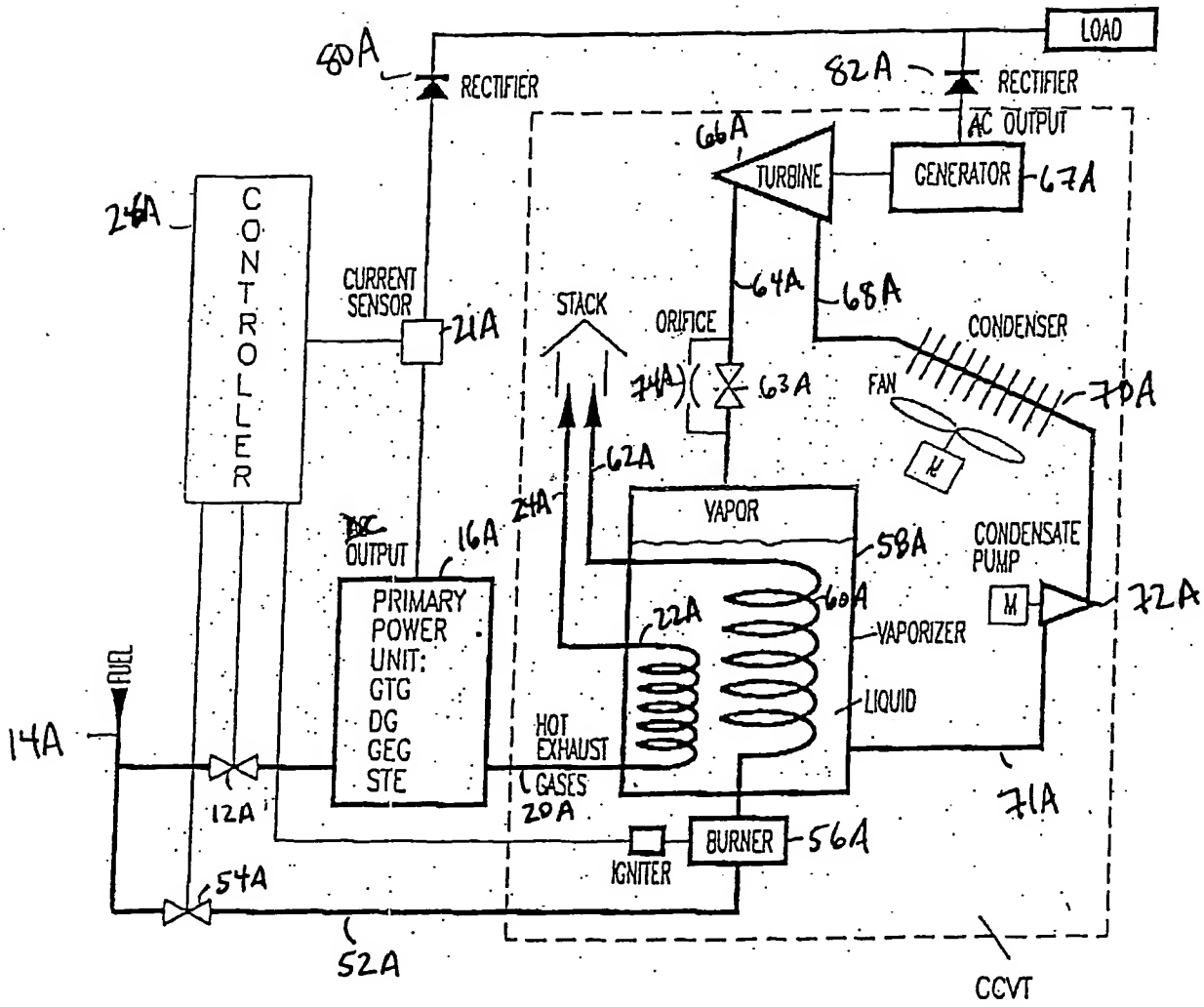

LOAD
60A
RECTIFIER
82A
RECTIFIER
AC OUTPUT
66A
TURBINE
GENERATOR
67A
24A
CONTROLLER
CURRENT SENSOR
21A
STACK
ORIFICE
64A
68A
CONDENSER
74A
63A
FAN
70A
62A
VAPOR
58A
CONDENSATE PUMP
72A
DC OUTPUT
16A
PRIMARY POWER UNIT: GTG DG GEG STE
22A
60A
VAPORIZER
LIQUID
FUEL
14A
HOT EXHAUST GASES
20A
12A
71A
BURNER
56A
IGNITER
54A
52A
CCVT

FIG. 4

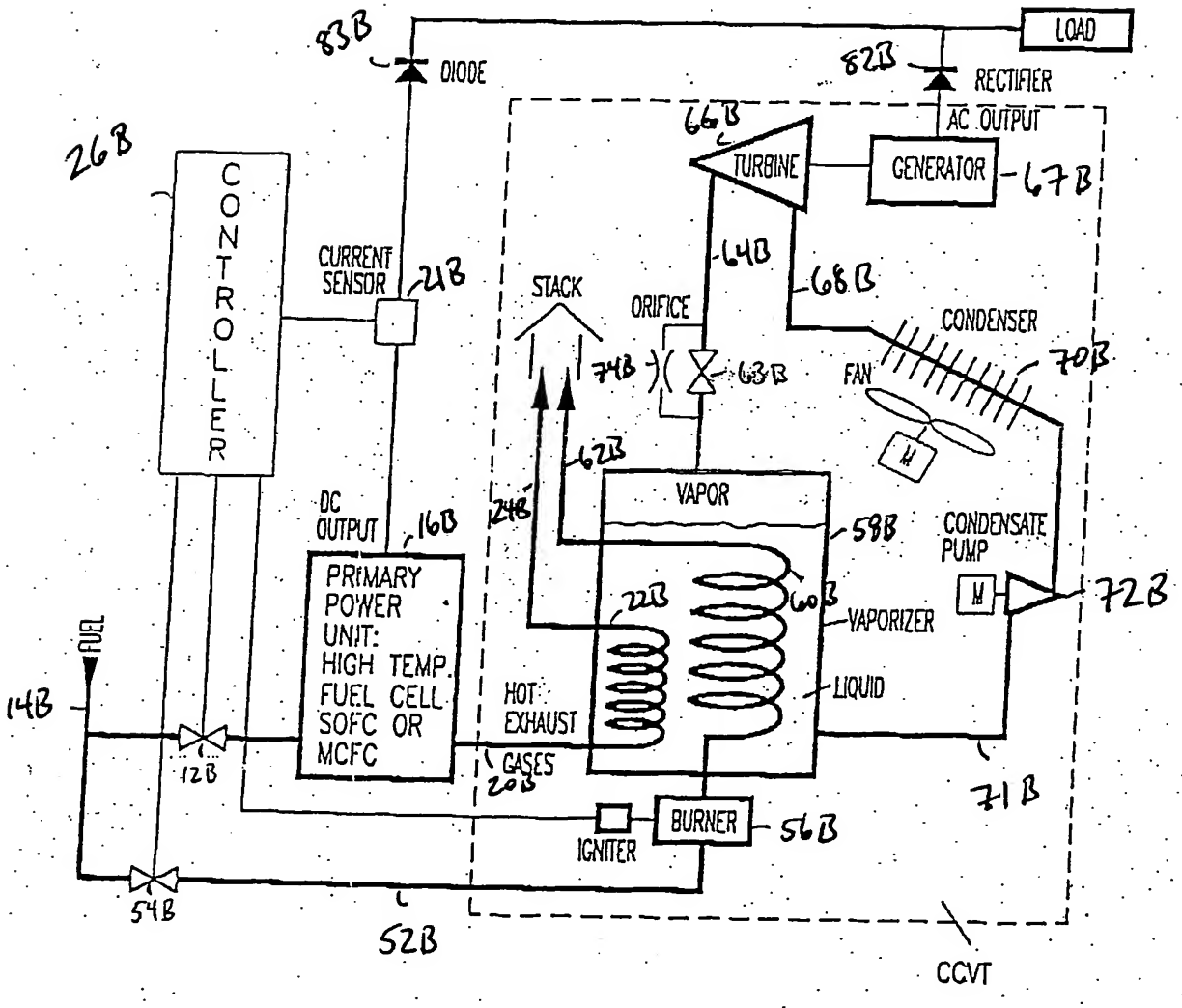

5B
LOAD
83B
DIODE
82B
RECTIFIER
AC OUTPUT
66B
TURBINE
GENERATOR
67B
26B
CONTROLLER
CURRENT SENSOR
22B
64B
68B
STACK
ORIFICE
CONDENSER
74B
63B
FAN
70B
62B
VAPOR
24B
58B
CONDENSATE PUMP
DC OUTPUT
16B
PRIMARY POWER UNIT: HIGH TEMP. FUEL CELL SOFC OR MCFC
60B
72B
VAPORIZER
FUEL
14B
HOT EXHAUST GASES
LIQUID
12B
20B
71B
BURNER
56B
IGNITER
54B
52B
CCVT

FIG. 5

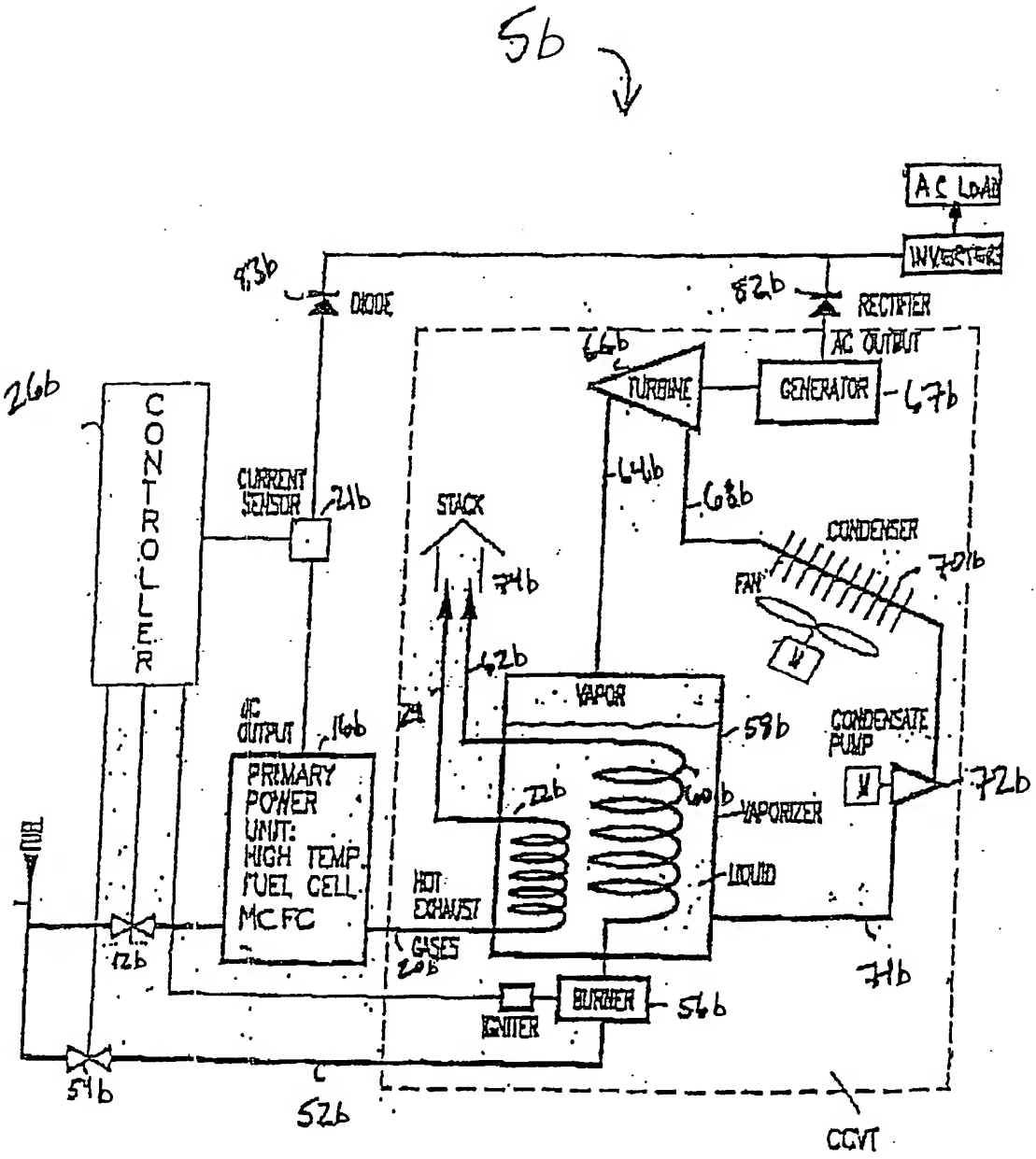

5b
AC LOAD
INVERTER
43b
DIODE
52b
RECTIFIER
AC OUTPUT
66b
TURBINE
GENERATOR
67b
26b
CONTROLLER
CURRENT SENSOR
21b
STACK
74b
64b
68b
CONDENSER
70b
FAN
62b
VAPOR
58b
CONDENSATE PUMP
72b
AC OUTPUT
16b
PRIMARY POWER UNIT: HIGH TEMP. FUEL CELL MCFC
22b
60b
VAPORIZER
LIQUID
FUEL
HOT EXHAUST GASES
20b
12b
IGNITER
BURNER
56b
54b
52b
71b
CCVT

FIG. 5A

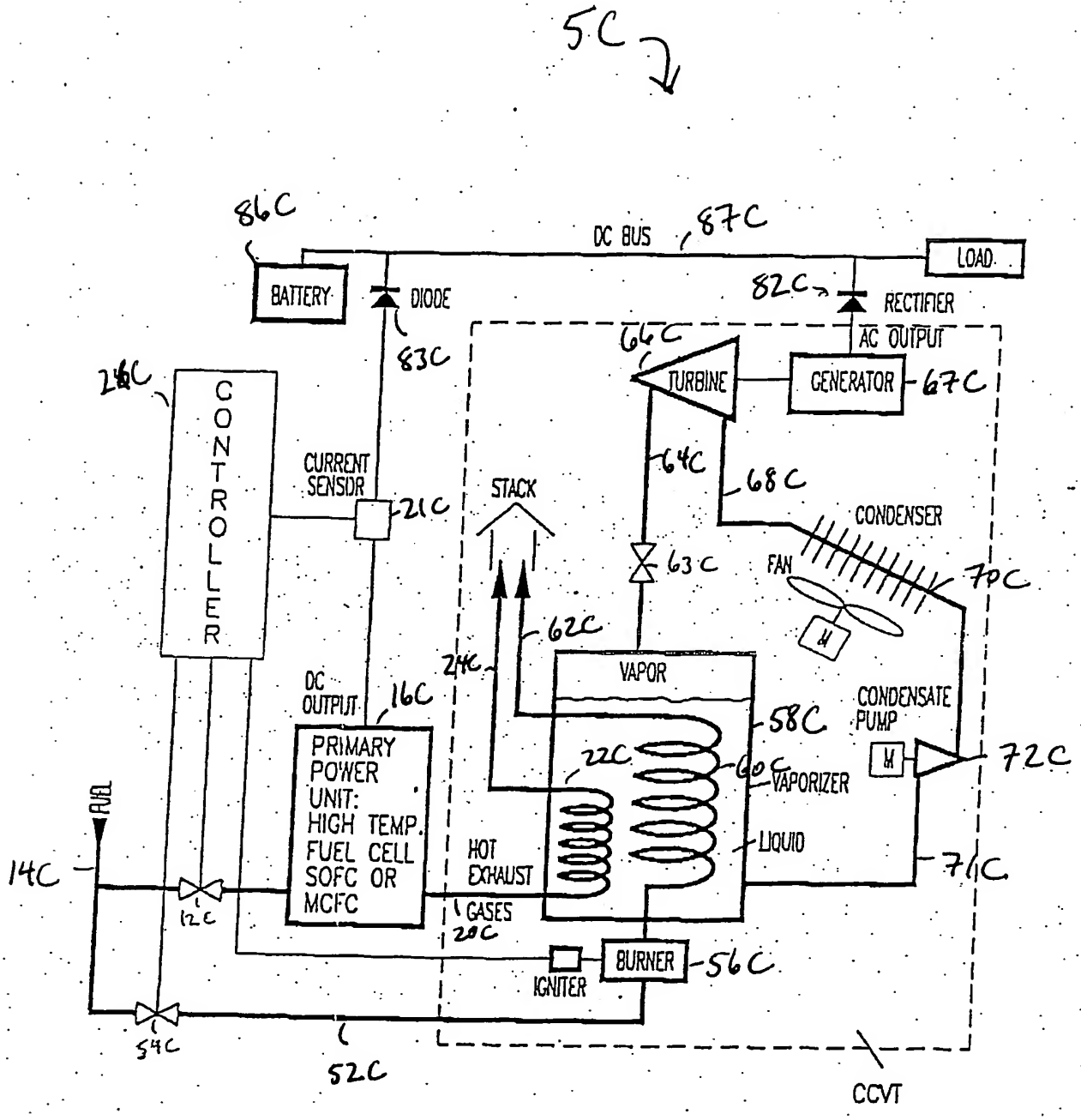

5C
86C
DC BUS
87C
LOAD
BATTERY
DIODE
83C
82C
RECTIFIER
AC OUTPUT
66C
TURBINE
GENERATOR
67C
26C
CONTROLLER
CURRENT SENSOR
21C
STACK
64C
68C
CONDENSER
63C
FAN
70C
62C
24C
VAPOR
DC OUTPUT
16C
58C
CONDENSATE PUMP
22C
60C
VAPORIZER
72C
PRIMARY POWER UNIT: HIGH TEMP. FUEL CELL SOFC OR MCFC
FUEL
14C
HOT EXHAUST GASES
20C
LIQUID
74C
12C
BURNER
56C
IGNITER
54C
52C
CCVT

FIG. 6

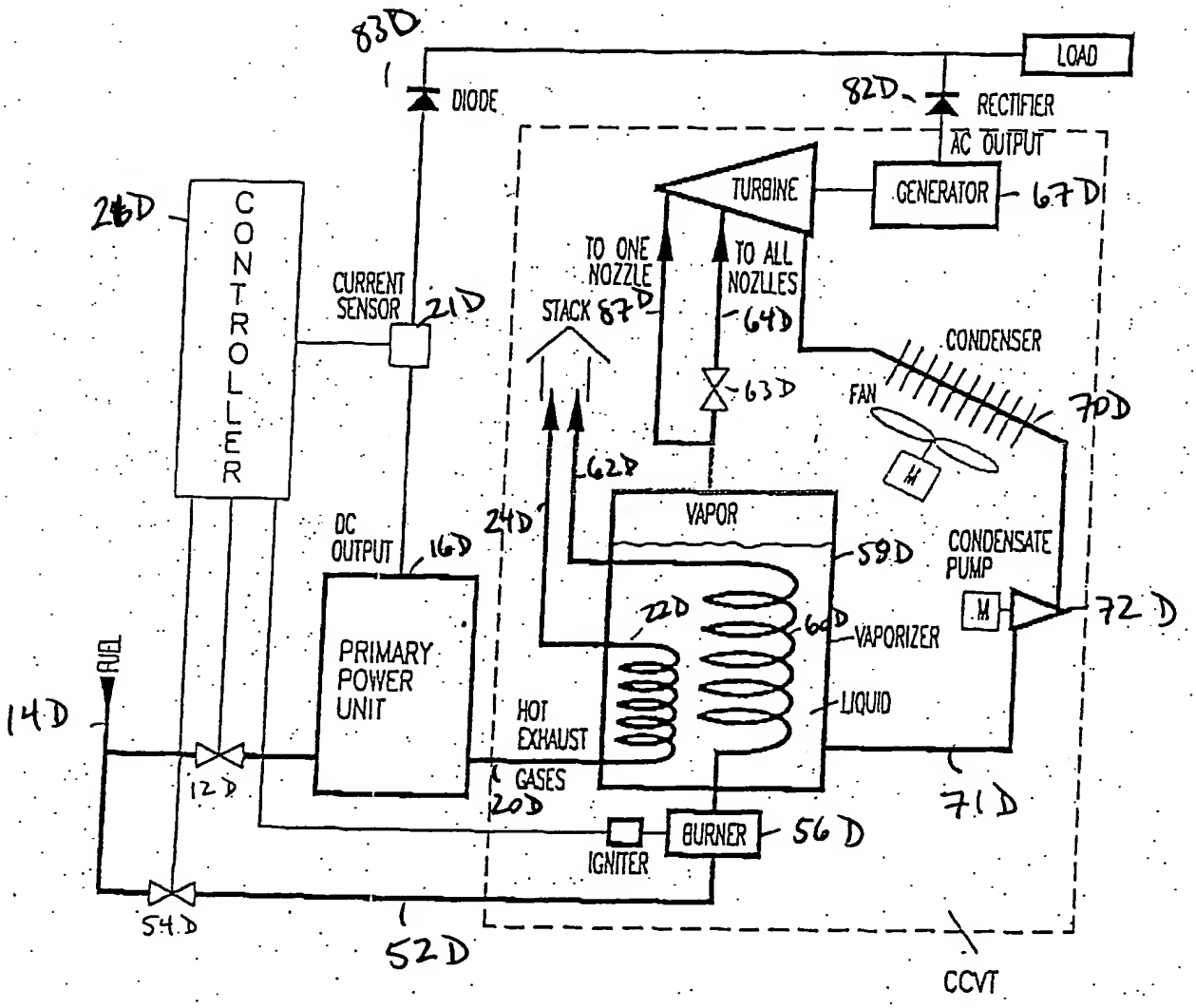

5D
83D
DIODE
LOAD
82D
RECTIFIER
AC OUTPUT
TURBINE
GENERATOR
67D
26D
CONTROLLER
CURRENT SENSOR
21D
TO ONE NOZZLE
STACK 87D
TO ALL NOZZLES
64D
63D
CONDENSER
FAN
70D
62D
24D
VAPOR
59D
DC OUTPUT
16D
CONDENSATE PUMP
72D
22D
60D
VAPORIZER
PRIMARY POWER UNIT
LIQUID
FUEL
14D
HOT EXHAUST GASES
20D
12D
71D
BURNER
56D
IGNITER
54D
52D
CCVT

FIG. 7

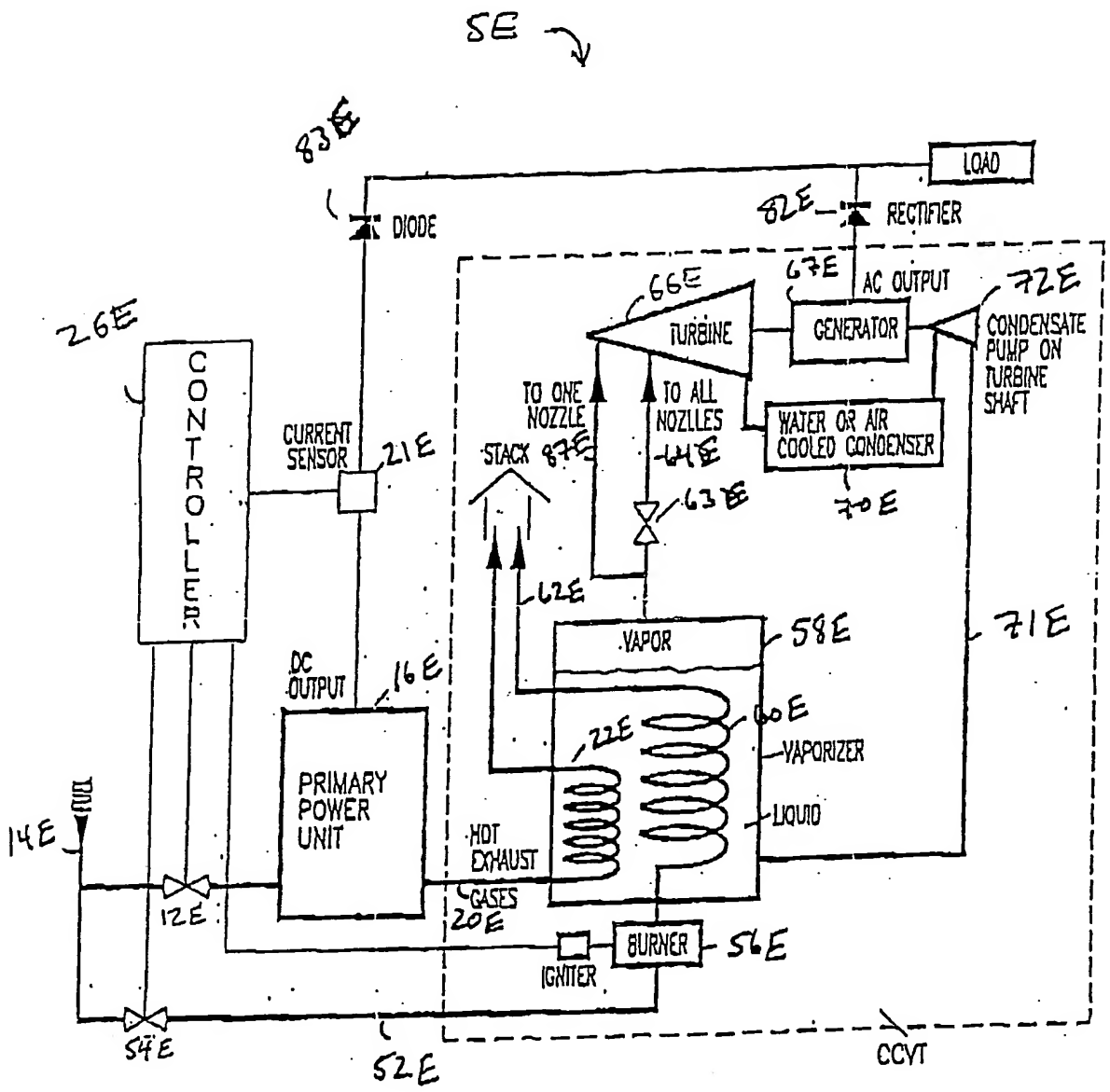

5E
83E
LOAD
DIODE
82E
RECTIFIER
66E
67E
AC OUTPUT
72E
TURBINE
GENERATOR
CONDENSATE PUMP ON TURBINE SHAFT
26E
CONTROLLER
TO ONE NOZZLE
TO ALL NOZZLES
WATER OR AIR COOLED CONDENSER
CURRENT SENSOR
21E
STACK 87E
64E
63E
70E
62E
VAPOR
58E
71E
DC OUTPUT
16E
60E
22E
VAPORIZER
PRIMARY POWER UNIT
LIQUID
FUEL
14E
HOT EXHAUST GASES
20E
12E
BURNER
56E
IGNITER
54E
52E
CCVT

FIG. 8

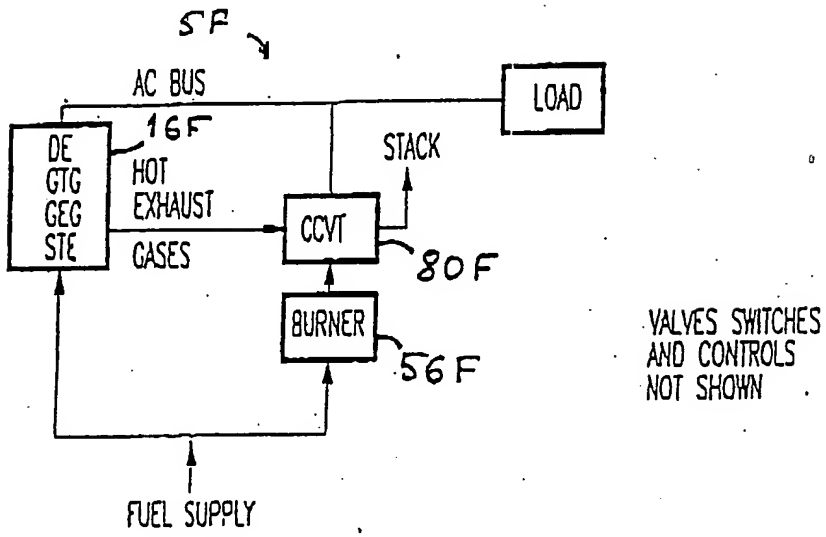

5F
AC BUS
LOAD
16F
DE
GTG
GEG
STE
HOT
EXHAUST
GASES
STACK
CCVT
80F
BURNER
56F
VALVES SWITCHES
AND CONTROLS
NOT SHOWN
FUEL SUPPLY

FIG. 9

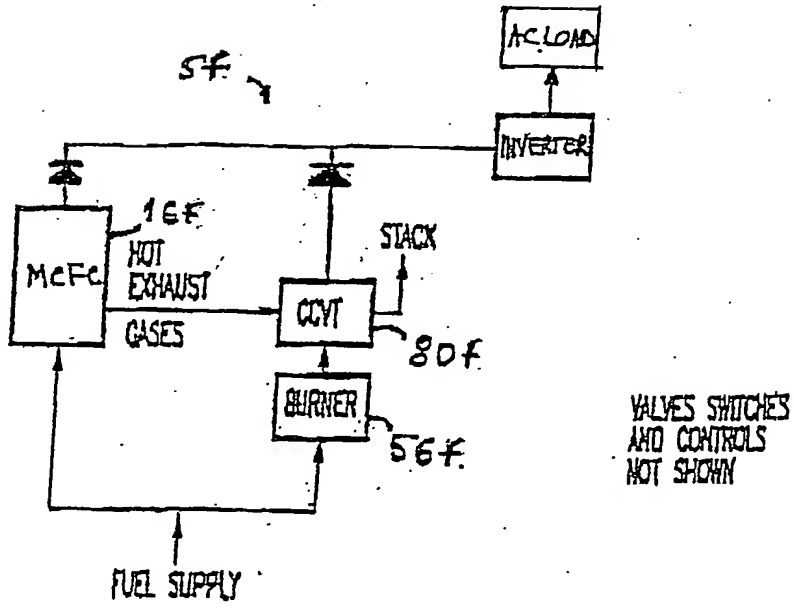

AC LOAD
5F
INVERTER
16F
MCFC
HOT
EXHAUST
GASES
STACK
CCVT
80F
BURNER
56F
VALVES SWITCHES
AND CONTROLS
NOT SHOWN
FUEL SUPPLY

FIG. 9A

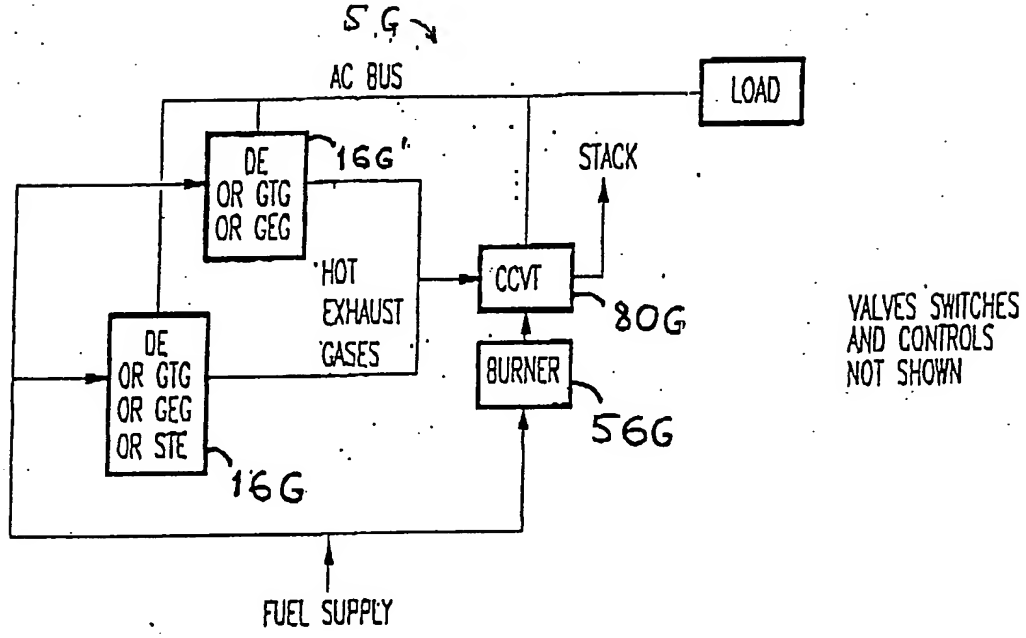

5.G
AC BUS
LOAD
DE OR GTG OR GEG
16G
STACK
HOT EXHAUST GASES
CCVT
80G
DE OR GTG OR GEG OR STE
16G
BURNER
56G
VALVES SWITCHES AND CONTROLS NOT SHOWN
FUEL SUPPLY

FIG. 10

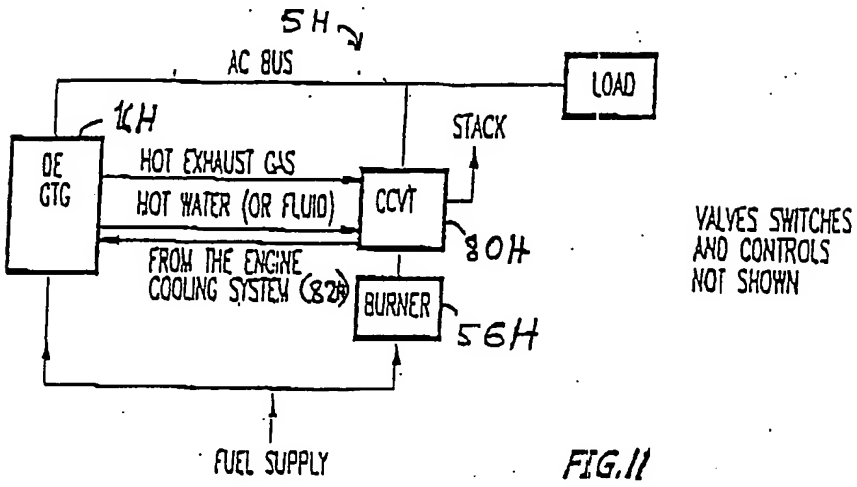

5H
AC BUS
LOAD
1CH
STACK
DE
GTG
HOT EXHAUST GAS
HOT WATER (OR FLUID)
CCVT
80H
FROM THE ENGINE
COOLING SYSTEM (82H)
BURNER
56H
VALVES SWITCHES
AND CONTROLS
NOT SHOWN
FUEL SUPPLY

FIG.11

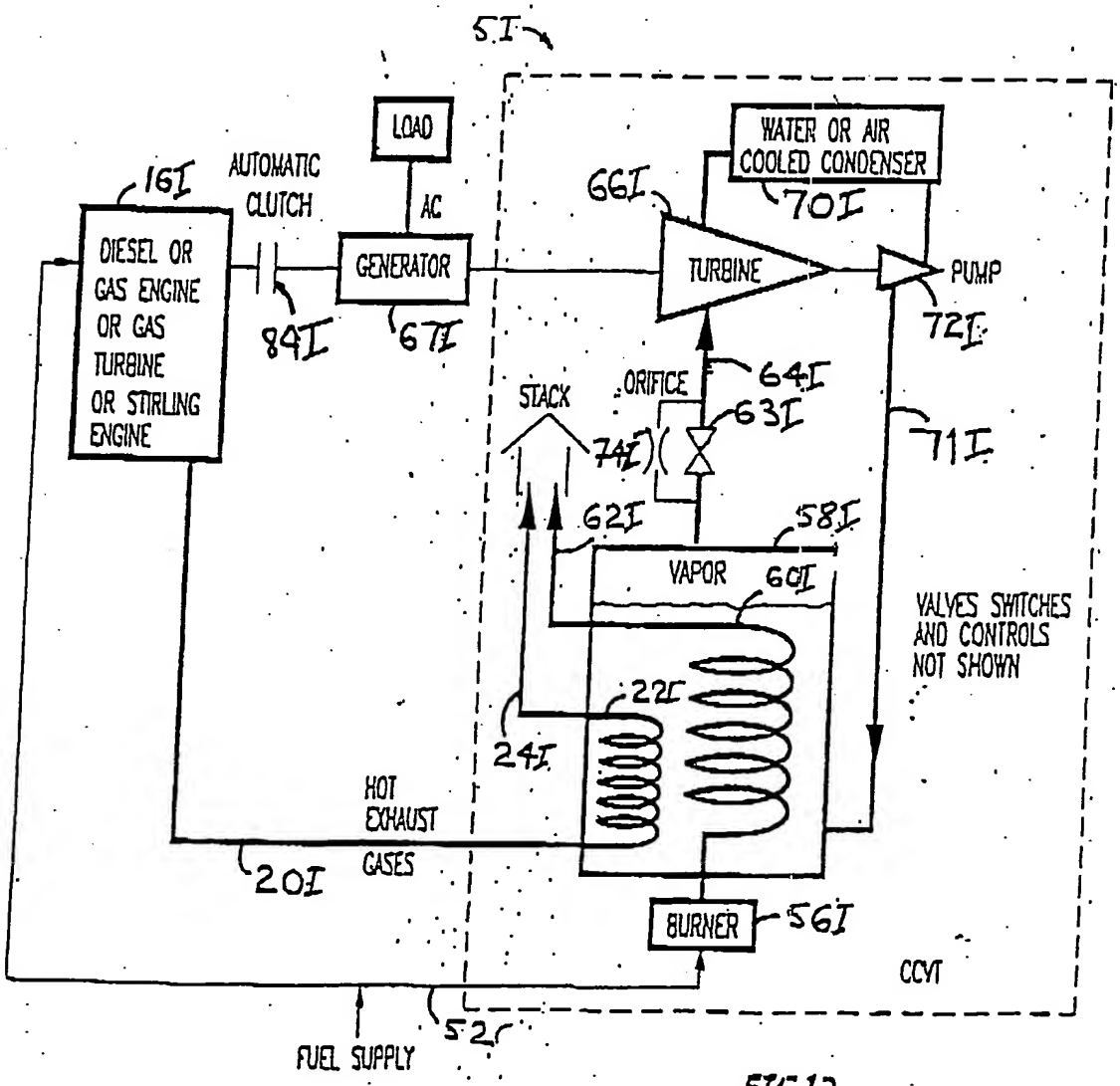

5I
LOAD
WATER OR AIR
COOLED CONDENSER
16I
AUTOMATIC
CLUTCH
AC
66I
70I
DIESEL OR
GAS ENGINE
OR GAS
TURBINE
OR STIRLING
ENGINE
GENERATOR
TURBINE
PUMP
84I
67I
72I
64I
ORIFICE
STACK
63I
74I
71I
62I
58I
VAPOR
60I
VALVES SWITCHES
AND CONTROLS
NOT SHOWN
22I
24I
HOT
EXHAUST
GASES
20I
BURNER
56I
CCVT
52
FUEL SUPPLY

FIG.12